CLAIMS

1. An imaging member comprising:

an electroconductive support containing an electroconductive layer thereon;

thereover a first layer comprising a metal alkyloxide, an amino siloxane, and a color change material dispersed in a binder;

wherein the color change material is a material that reversibly changes color in the presence of a Lewis base and which color change is reversible upon exposure to light; and

a charge generating layer and a charge transport layer.

2. The imaging member of claim 1, wherein the metal alkyloxide is selected from the group consisting of metal methoxides, metal ethoxides, metal propoxides, metal isopropoxides, metal butoxides, titanium propoxide, titanium isopropoxide, titanium methoxide, titanium butoxide, titanium ethoxide, zirconium isopropoxide, zirconium propoxide, zirconium butoxide, zirconium ethoxide, zirconium methoxide, or a combination thereof.

3. The imaging member of claim 1, wherein the siloxane is selected from the group consisting of amino alkylalkoxysilanes, 3-aminopropyltrimethoxysilane, 3-aminopropyltriethoxysilane, 3-aminopropyldiisopropylethoxysilane, aminophenyltrimethoxysilane, 3-aminopropylmethyldiethoxysilane, 3-aminopropylpentamethyldisiloxane, or a combination thereof.

4. The imaging member of claim 1, wherein the color change material is selected from the group consisting of phenolphthalein, phenolsulfonephthalein, thymolphthalein, or a combination thereof.

5. The imaging member of claim 1, wherein the first layer is disposed at a thickness of about 0.1 microns to about 20 microns.

6. The imaging member of claim 1, wherein the support comprises a metal, metal alloy, aluminum, zirconium, niobium, tantalum, vanadium, hafnium, titanium, nickel, stainless steel, chromium, tungsten, molybdenum, or a combination thereof.

7. The imaging member of claim 1, wherein the charge generating layer comprises a material selected from the group consisting of inorganic photoconductive materials, amorphous selenium, trigonal selenium, selenium alloys, selenium-tellurium, selenium-tellurium-arsenic, selenium arsenide, organic photoconductive materials, phthalocyanine pigments, the X-form of metal free phthalocyanine, metal phthalocyanines, vanadyl phthalocyanine, copper phthalocyanine, quinacridones, dibromo anthanthrone pigments, benzimidazole perylene, substituted 2,4-diamino-triazines, polynuclear aromatic quinones, enzimidazole perylene, or a combination thereof.

8. The imaging member of claim 1, wherein the charge transport layer comprises a material selected from the group consisting of a charge transporting aromatic amine compound, triphenylmethane, bis(4-diethylamine-2-methylphenyl)phenylmethane; 4'-4"-bis(diethylamino)-2',2"-dimethyltriphenylmethane, N,N'-bis(alkylphenyl)-[1,1'-biphenyl]-4,4'-diamine, N,N'-diphenyl-N,N'-bis(chlorophenyl)-[1,1'-biphenyl]-4,4'-diamine, N,N'-diphenyl-N,N'-bis(3"-methylphenyl)-(1,1'-biphenyl)-4,4'-diamine, or a combination thereof.

9. The imaging member of claim 1, wherein the metal alkyloxide is present in the first layer in an amount of from about 5% to about 95% or from about 20% to about 80%, based upon the total weight of the first layer.

10. The imaging member of claim 1, wherein the amino siloxane is present in the first layer in an amount of from about 95% to about 5% or from about 80% to about 20% based upon the total weight of the first layer.

11. The imaging member of claim 1, wherein the color change material is present in the first layer in an amount such as from about 0.001% to about 50%, or from about 0.1% to about 10%, weight basis, based upon the total weight of the first layer.

12. A process for preparing an imaging member comprising:

providing an electroconductive support having an electroconductive layer thereon;

forming thereover a first layer comprising a metal alkyloxide, an amino siloxane, and a color change material dispersed in a binder;

wherein the color change material is a material that reversibly changes color in the presence of a Lewis base and which color change is reversible upon exposure to light; and

forming thereover a charge generating layer and a charge transport layer.

13. The process of claim 12, wherein the metal alkyloxide is selected from the group consisting of metal methoxides, metal ethoxides, metal propoxides, metal isopropoxides, metal butoxides, titanium propoxide, titanium isopropoxide, titanium methoxide, titanium butoxide, titanium ethoxide, zirconium isopropoxide, zirconium propoxide, zirconium butoxide, zirconium ethoxide, zirconium methoxide, or a combination thereof.

14. The process of claim 12, wherein the amino siloxane is selected from the group consisting of an amino alkylalkoxysilane, 3-aminopropyltrimethoxysilane, 3-aminopropyltriethoxysilane, 3-aminopropyldiisopropylethoxysilane, aminophenyltrimethoxysilane, 3-aminopropylmethyldiethoxysilane, 3-aminopropylpentamethyldisiloxane, or a combination thereof.

15. The process of claim 12, wherein the color change material is selected from the group consisting of phenolphthalein, phenolsulfonephthalein, thymolphthalein, or a combination thereof.

16. The process of claim 12, wherein the support comprises a metal, metal alloy, aluminum, zirconium, niobium, tantalum, vanadium, hafnium, titanium, nickel, stainless steel, chromium, tungsten, molybdenum, or a combination thereof.

17. The process of claim 12, wherein the charge generating layer comprises a material selected from the group consisting of inorganic photoconductive materials, amorphous selenium, trigonal selenium, selenium alloys, selenium-tellurium, selenium-tellurium-arsenic, selenium arsenide, organic photoconductive materials, phthalocyanine pigments, the X-form of metal free phthalocyanine, metal phthalocyanines, vanadyl phthalocyanine, copper phthalocyanine, quinacridones, dibromo anthanthrone pigments, benzimidazole perylene, substituted 2,4-diamino-triazines, polynuclear aromatic quinones, enzimidazole perylene, or a combination thereof.

18. The process of claim 12, wherein the charge transport layer comprises a material selected from the group consisting of a charge transporting aromatic amine compound, triphenylmethane, bis(4-diethylamine-2-methylphenyl)phenylmethane; 4'-4"-bis(diethylamino)-2',2"-dimethyltriphenylmethane, N,N'-bis(alkylphenyl)-[1,1'-biphenyl]-4,4'-diamine, N,N'-diphenyl-N,N'-bis(chlorophenyl)-[1,1'-biphenyl]-4,4'-diamine, N,N'-diphenyl-N,N'-bis(3"-methylphenyl)-(1,1'-biphenyl)-4,4'-diamine, or a combination thereof.

19. The process of claim 12, wherein forming a first layer comprises forming the first layer at a thickness of about 0.1 micron to about 20 microns.

20. The process of claim 12, wherein the metal alkyloxide is present in the first layer in an amount of from about 5% to about 95% or from about 20% to about 80%, based upon the total weight of the first layer.

21. The process of claim 12, wherein the amino siloxane is present in the first layer in an amount of from about 95% to about 5% or from about 80% to about 20%, based upon the total weight of the first layer.

22. The process of claim 12, wherein the color change material is present in the first layer in an amount such as from about 0.001% to about 50%, or from about 0.1% to about 10%, weight basis, based upon the total weight of the first layer.